IN THE SPECIFICATION:

Please amend the specification as follows:

Delete paragraph [0003] and replace it with the following new paragraph:

[0003] In general, a single substrate will contain a network of adjacent target portions that are successively exposed. Known lithographic apparatus include so-called *steppers*, in which each target portion is irradiated by exposing an entire pattern onto the target portion in one go, and so-called *scanners*, in which each target portion is irradiated by scanning the pattern through the ~~projection~~ beam in a given direction (the "scanning"-direction) while synchronously scanning the substrate parallel or anti-parallel to this direction.

Delete paragraph [0004] and replace it with the following new paragraph:

[0004] In order to obtain an accurate projection of the pattern onto the substrate, different requirements have to be met inside a lithographic apparatus. As an example, accurate displacement and positioning of both the substrate and the patterning devices are required, the environmental conditions inside the lithographic apparatus have to be monitored and maintained to meet the requirements. In order to obtain these requirements, the lithographic apparatus is equipped with a plurality of instruments such as sensors, actuators, pumps, etc... In most cases, those instruments are wired to either a power supply and/or a control unit by ~~means of~~ cables or wires. Examples of such cables are optical fibers and electrically conductive wires provided with an insulation layer.

Delete paragraph [00010] and replace it with the following new paragraph:

SUMMARY OF THE INVENTION

[00010] Principles of the present invention, as embodied and broadly described herein, provide for a lithographic apparatus configured to wirelessly communicate signaling information. In one embodiment, the apparatus comprises an illumination system to provide a beam of radiation, a support ~~structure~~ configured to support a patterning device that imparts the beam of radiation with a pattern in its cross-section, a substrate holder configured to hold a substrate, a projection system to project the patterned beam radiation onto a target portion

of the substrate, and a wireless signaling system configured to transmit and receive information-bearing electromagnetic radiation. The wireless system comprises at least a transmitter to transmit the electromagnetic radiation and a first transducer configured to receive and convert the electromagnetic radiation into a first electrical signal containing the information which is used to control at least a portion of the support structure, the substrate table, the projection system, and the illumination system.

Delete paragraph [00017] and replace it with the following new paragraph:

[00017] According to a further aspect of the invention, there is provided a device manufacturing method comprising ~~providing a substrate~~, providing a ~~projection~~ beam of radiation using an illumination system, using patterning devices to impart the ~~projection~~ beam with a pattern in its cross-section, and projecting the patterned beam of radiation onto a target portion of the substrate. The method further senses a state of either the illumination system, the projection system, or the patterning devices or the substrate, produces an electric signal representing the state, and converts the electric signal into electromagnetic radiation by a first transducer and transmitting the electromagnetic radiation to a receiver.

Delete paragraph [00020] and replace it with the following new paragraph:

[00020] The term "patterning devices" used herein should be broadly interpreted as referring to means that can be used to impart a projection beam with a pattern in its cross-section such as to create a pattern in a target portion of the substrate. It should be noted that the pattern imparted to the projection beam may not exactly correspond to the desired pattern in the target portion of the substrate. Generally, the pattern imparted to the ~~projection~~ beam will correspond to a particular functional layer in a device being created in the target portion, such as an integrated circuit.

Delete paragraph [00022] and replace it with the following new paragraph:

[00022] The support ~~structure~~ supports, i.e. bares the weight of, the patterning devices. It holds the patterning devices in a way depending on the orientation of the patterning devices, the design of the lithographic apparatus, and other conditions, such as for example whether or not the patterning devices is held in a vacuum environment. The support can be using mechanical clamping, vacuum, or other clamping techniques, for example electrostatic

clamping under vacuum conditions. The support ~~structure~~ may be a frame or a table, for example, which may be fixed or movable as required and which may ensure that the patterning devices is at a desired position, for example with respect to the projection system. Any use of the terms "reticle" or "mask" herein may be considered synonymous with the more general term "patterning devices".

Delete paragraph [00040] and replace it with the following new paragraph:

[00040] *a radiation system SO, BD, IL:* configured to supply a ~~projection~~ beam PB of radiation (e.g. UV radiation such as for example generated by an excimer laser operating at a wavelength of 248 nm, 193 nm or 157 nm, or by a laser-fired plasma source operating at 13.6 nm). In this particular case, the radiation system also comprises a radiation source SO;

Delete paragraph [00041] and replace it with the following new paragraph:

[00041] *first support structure (a mask table)* MT: for supporting patterning devices (e.g., a mask) MA and connected to first positioning mechanism PM for accurately positioning the patterning devices with respect to [[item]] a projection system PL;

Delete paragraph [00042] and replace it with the following new paragraph:

[00042] *a second object table (substrate table or substrate holder) WT*: provided with a substrate holder for holding a substrate W (e.g. a resist-coated silicon wafer), and connected to second positioning mechanism PW for accurately positioning the substrate with respect to [[item]] projection system PL and measurement ~~structure~~ device IF (e.g., interferometric) to accurately indicate the position of the substrate and/or substrate table with respect to lens PL; and

[00043] *[[a]] the projection system ("lens") PL*: (e.g. a quartz and/or CaF_2 lens system or a catadioptric system comprising lens elements made from such materials, or a mirror system) configured to image an irradiated portion of the mask MA onto a target portion C (e.g., comprising one or more dies) of the substrate W.

Delete paragraph [00044] and replace it with the following new paragraph:

[00044] As here depicted, the apparatus is of a ~~transmissive~~ reflective type (i.e. has a ~~transmissive~~ reflective mask). However, in general, it may also be of a ~~reflective~~ transmissive type, for example (with a ~~reflective~~ transmissive mask). Alternatively, the apparatus may employ another kind of patterning mechanism, such as a programmable mirror array of a type as referred to above.

Delete paragraph [00045] and replace it with the following new paragraph:

[00045] The illuminator IL receives ~~a beam of~~ radiation from a radiation source SO. The source and the lithographic apparatus may be separate entities, for example when the source is a plasma discharge source. In such cases, the source is not considered to form part of the lithographic apparatus and the radiation [[beam]] is generally passed from the source SO to the illuminator IL with the aid of a radiation collector comprising for example suitable collecting mirrors and/or a spectral purity filter. In other cases the source may be integral part of the apparatus, for example when the source is a mercury lamp. The source SO and the illuminator IL, may be referred to as a radiation system.

Delete paragraph [00046] and replace it with the following new paragraph:

[00046] The illuminator IL may comprise adjusting mechanism for adjusting the angular intensity distribution of the beam. Generally, at least the outer and/or inner radial extent (commonly referred to as σ-outer and σ-inner, respectively) of the intensity distribution in a pupil plane of the illuminator can be adjusted. The illuminator provides a conditioned beam of radiation~~, referred to as the projection beam~~ PB, having a desired uniformity and intensity distribution in its cross-section.

Delete paragraph [00047] and replace it with the following new paragraph:

[00047] The ~~projection~~ beam PB is incident on the mask MA, which is held on the mask table MT. Being reflected by the mask MA, the ~~projection~~ beam PB passes through the lens PL, which focuses the beam onto a target portion C of the substrate W. With the aid of

the second positioning mechanism PW and position sensor IF2 (e.g., an interferometric device), the substrate table WT can be moved accurately, e.g., so as to position different target portions C in the path of the beam PB.

Delete paragraph [00051] and replace it with the following new paragraph:

[00051] *scan mode*: essentially the same scenario applies, except that a given target portion C is not exposed in a single "flash." Instead, the mask table MT is movable in a given direction (the so-called "scan direction", e.g., the y direction) with a speed v, so that the ~~projection~~ beam PB is caused to scan over a mask image; concurrently, the substrate table WT is simultaneously moved in the same or opposite direction at a speed $V = Mv$, in which M is the magnification of the lens PL (typically, M = 1/4 or 1/5). In this manner, a relatively large target portion C can be exposed, without having to compromise on resolution.

Delete paragraph [00052] and replace it with the following new paragraph:

[00052] *other mode*: the mask table MT is kept essentially stationary holding a programmable patterning structure, and the substrate table WT is moved or scanned while a pattern imparted to the ~~projection~~ beam is projected onto a target portion C. In this mode, generally a pulsed radiation source is employed and the programmable patterning structure is updated as required after each movement of the substrate table WT or in between successive radiation pulses during a scan. This mode of operation can be readily applied to maskless lithography that utilizes programmable patterning structure, such as a programmable mirror array of a type as referred to above.

Delete paragraph [00071] and replace it with the following new paragraph:

[00071] [[he]] <u>The</u> energy storage device may store the energy under different forms. As an example, the energy storage device may be a rechargeable battery. The energy received by the first transducer may also be converted into kinetic energy. In that case, the energy storage device can be a flywheel. The flywheel can be driven by a small electric motor. The rotor of the motor itself may also act as a flywheel. The flywheel is preferably equipped with a contact-less magnetic bearing to allow frictionless rotation. Such an energy storage device is also well suited to be applied in vacuum since there are no chemical

processes involved in the charging or discharging cycle. Other types of kinetic energy storage may also be considered.